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## The ferns and flowering plants of Nantucket—XI

EUGENE P. BICKNELL

### CELASTRACEAE

#### \*CELASTRUS SCANDENS L.

Rare; it is found sparingly on Coskaty entwined with wild rose and red raspberry near the harbor shore, and in Shawkemo, where it is massed thickly along a low bank back of the beach. Flower buds June 4, 1909; first flowers June 2, 1911.

### ACERACEAE

#### ACER RUBRUM L.

In swamps and low grounds. It is commonly of no greater stature than a shrub, but in sheltered thickets becomes a well-developed tree, and in Beechwood has attained a height of not less than thirty to thirty-five feet, the trunks thirty to thirty-five inches in basal girth. The leaves of different trees are widely variable, sometimes appearing much like those of *Acer carolinianum*, again taking an elongated form with narrowly cleft attenuate and sharply cut lobes.

#### \*ACER CAROLINIANUM Walter.

Frequent in boggy thickets, sometimes side by side with those forms of *Acer rubrum* with which it is most sharply in contrast. It is a tree of marked individuality when appointed in its true features but these are not always well expressed and its divergence from the red maple cannot be said to have passed into a fixed separation. In its most characteristic forms the small thickish leaves, rather clustered at the ends of the branchlets, are of rounded outline and broadly notched into three short lobes, the blades, only 4–6 cm. long and wide, having the upper surface of a dark shining green, the lower surface conspicuously whitened and more or less pubescent.

\*ACER SACCHARINUM L.

*A. dasycarpum* Ehrh.

About two miles from the town scattered among an open growth of pines off the Wauwinet road are to be found a few small silver maples not over three or four feet in height. They were first observed in 1909.

\*ACER PLATANOIDES.

The Norway maple has been little used on Nantucket, but is self-seeded in planted grounds and has occasionally grown up into small trees in neglected places.

\*ACER PSEUDO-PLATANUS L.

Many fine sycamore maples shade the streets of the town and produce a numerous progeny of seedlings some of which persist and grow into small trees in out of the way places. In full flower along the streets June 6, 1909.

The three introduced maples here mentioned have only the slenderest claim to be included in the island's wild flora and are reported mainly for purposes of record as widely cultivated trees which are tending to become naturalized.

BALSAMACEAE

IMPATIENS BIFLORA Walt.

Common in low grounds often bordering thickets or growths of rankly growing taller plants. A form occurs having very pale or whitish spotted flowers. First flowers July 1, 1912; blooms through September.

VITACEAE

VITIS LABRUSCA L.

Very common generally and in many places conspicuous from its luxuriant growth. It thrives in low thickets draping the shrubbery and strays into open places, trailing among the grass and herbaceous plants or even sprawling in bare sandy fields. Flower buds June 12, 1909; first flowers June 17, 1908; June 18, 1910; well-formed green fruit June 27, 1912.

The fruit may be of the largest size and deep purple or amber purple in color, or much smaller, more numerous and crowded

in the clusters, and greenish or greenish purple even when fully ripe. This pale-fruited form is locally abundant on Marthas Vineyard, where it is often wholly green at maturity and is known to the islanders as the white wild grape. I did not myself see it growing there, but, on Sept. 28, 1911, was shown several large sacks filled with the perfectly ripe green fruit which, in gathering, had been kept separate from the usual purple kind.

*VITIS AESTIVALIS* Michx.

Found only on the eastern side of the island, where it is frequent or locally common in wet or dry thickets sometimes actually intertwined with *Vitis Labrusca*. It occurs in Shawkemo, Pocomo, Coskaty, and Squam, and south to Tom Never's Pond. Comes into flower rather later than *V. Labrusca*. Flower buds very small June 7, 1911, and June 13, 1908; first flowers June 26, 1910; still in bloom July 11, 1912. It appears to fruit only sparingly on Nantucket, although bearing abundantly on Marthas Vineyard. Fruit small and green Aug. 13, 1906; becoming purplish Sept. 11, 1907. On Marthas Vineyard much of the fruit was still unripe Oct. 5, 1912.

A very old vine near Abram's Point measured twenty-one inches around close to the base and seventeen inches a foot above.

*PARTHENOCISSUS QUINQUEFOLIA* (L.) Planch.

In thickets, either in low grounds or on the dry plains, sometimes trailing over banks clothed with crisp lichens and bearberry or even thriving in exposed white sand. Flower buds barely visible June 1, 1909, and June 14, 1911; no open flowers up to July 12, 1912.

The leaflets vary from glabrous to thickly pubescent with silvery hairs on the lower surface and to some extent on the upper surface also; this pubescence may extend thinly along the petioles but seems always to be absent from the branchlets and tendrils. It is a character that has been adduced as distinctive of *Parthenocissus hirsutus* (Donn) Small, but as to the pubescent Nantucket plant there seems little reason to doubt that it is merely a condition of the common Virginia creeper. The leaves of young plants are often very pubescent, and in older plants the lower leaves may be pubescent and the later ones quite glabrous.

MALVACEAE

MALVA ROTUNDIFOLIA L.

An abundant weed, flowering freely from May through September and doubtless until frost.

\*MALVA VERTICILLATA L.

The herbarium of the Nantucket Maria Mitchell Association contains a specimen of this mallow, collected by Mrs. Nellie F. Flynn, bearing the record "Waste place, Sept. 22, 1902."

\*MALVA MOSCHATA L.

Several white-flowered plants in full bloom July 9, 1912, in a vegetable garden at Surfside; Surfside, Aug. 1909, Mrs. Mary A. Albertson; lane off Madequet road, 1905, Mrs. Eleanor W. Morgan, *vide* F. G. Floyd.

\*ALTHAEA ROSEA Cav.

Freely spontaneous by street sides and in neglected places about the town and appearing occasionally in waste lots in the suburbs. The seedling plants begin to spring up at the end of May. Just in flower in several waste spots July 12, 1912.

HIBISCUS MOSCHEUTOS L.

When in bloom the rose-mallow is conspicuous at a number of the shore ponds on the northern and eastern sides of the island, but it seems to be quite wanting about the ponds on the south shore. At most of its localities it is not abundant, although growing in profusion at a few places. It is found at Capaum Pond, Reed Pond, Monomoy, Shimmo, Squam Pond, and on Coskaty, where it was in full bloom Aug. 16, 1906. Flowers observed as late as Sept. 11, 1907.

Mr. Floyd's notes refer to a form having white flowers with a crimson eye found by a small pond in Monomoy by Miss Mary Foster Coffin. It is not improbable that this may have been *Hibiscus oculiroseus* Britton, which is not rare on Long Island.

HYPERICACEAE

ASCYRUM HYPERICOIDES L.

Long known from Nantucket, the northeastern limit of its range, but not at all a scarce plant there, as has been supposed.

It is, however, confined to the eastern side of the island, where it is locally common from Wauwinet to Quidnet, extending west to Beechwood and south to beyond Sachacha Pond. In full flower Aug. 7, 1906; continues to bloom until late in September. It often spreads out into patches of considerable size, which become noticeable from their light green color as early as the middle of June.

#### HYPERICUM ADPRESSUM Bart.

Common about several ponds in Polpis and Saul's Hills; west of Sachacha Pond; Waqutuquaib Pond; Miacomet Pond; a single early flower July 11, 1912; in full flower Aug. 7, 1906; Sept. 1, 1904; some flowers remaining Sept. 18, 1907. The young plants have become several inches high by the middle of June.

Early in the season this St. John's-wort may be seen in small ponds either wholly submerged or showing emerged leafy tips. Later, when the waters have fallen, such plants often develop with unusual vigor, becoming fully two feet high with the leaves proportionately enlarged and the submerged portion of the stem greatly thickened with spongy tissue (var. *spongiosum* Robinson). Where colonies of the plant extend back from a flooded shore a complete gradation may be traced from this spongiöse aquatic condition to the more usual terrestrial state. The latter comes earliest into bloom, the most dwarfed examples of the driest situations flowering first and often precociously.

The spongiöse tissue is doubtless homologous with the aerenchyma produced on the floating stems of *Decodon verticillatus*. A slight but evident spongiöse enlargement of the lower part of the stem is sometimes seen in *Hypericum canadense* and in *Hypericum boreale* when these low ground plants grow in very wet places.

#### HYPERICUM PERFORATUM L.

One of the bright-flowered weeds of fields and waysides, and scattered widely over the plains and commons. First flowers June 27, 1910; June 29, 1912.

#### HYPERICUM PUNCTATUM Lam.

Not common but found sparingly at a number of widely separated stations, mainly on the eastern side of the island; not

observed west of Maxcy's and Hummock Ponds. Plants of full size June 15, 1911; small flower buds June 11, 1912; in full flower and with some mature pods Aug. 16, 1906. So far as observed, the Nantucket plant has always sessile broadly clasping leaves.

\**HYPERICUM BOREALE* (Britton) Bicknell.

This is the commonest *Hypericum* of the island, abounding in low grounds, damp or wet sandy places, and pond shores. It is sometimes aquatic, inhabiting deep water with the habit of a *Callitriche*, the elongated leafy stems either wholly submerged or their tips emersed. In wet sand it may become strongly stoloniferous, putting forth prostrate basal offshoots which reach a length of several inches and root at intervals, sending up small flowering stems and terminating in a cluster of stems from the rooted tip. The young plants become recognizable early in June. Just in flower Aug. 13, 1906, remaining in bloom through September.

*HYPERICUM MUTILUM* L.

Common in low grounds, often with its characters unusually well emphasized, the broadly clasping leaves becoming as large as 3 cm. long by 2 cm. wide. The earliest leaves are observable at the end of May and the young plants take definite form early in June. In full flower Aug. 13, 1906; flowering through September.

\**HYPERICUM MAJUS* (A. Gray) Britton.

Infrequent, growing in damp places. West and southwest of the town; Trot's Swamp; Miacomet Pond; Quaise. Just in flower Aug. 11, 1906; in full flower Sept. 8, 1904; Sept. 12, 1907.

*HYPERICUM CANADENSE* L.

Common in low grounds and wet sandy places. Leaves often almost filiform linear. Plants very small May 30, 1909; a single early flower June 20, 1908, and July 3, 1912; in full flower and with mature capsules Aug. 13, 1906; continues in flower through September.

\**Hypericum dissimulatum* sp. nov.

Erect, often from an oblique or horizontal rooting base, commonly 1.5-3 dm. high, exceptionally up to 5.5 dm., not often

branched below the middle; leaves narrowly oblong, obtuse, sessile or subclasping, 3-5-nerved, 1-3 cm. long, 2-6 mm. wide; branches slender, openly ascending, bearing dichotomous many-flowered bracteolate cymes, the bracts subulate; sepals oblong to lanceolate, obtuse or acutish, equaling or shorter than the capsules; capsules greenish to reddish purple, small, 2-4 mm. long, ellipsoid to conic-ovoid.

Maine to Maryland and North Carolina. Type from Nantucket, damp roadside west of the town, Sept. 20, 1899, in flower and fruit, in herb. N. Y. Botanical Garden. Also collected on Nantucket Sept. 8, 1904, Miacomet Pond, and Sept. 9, 1904, near the town.

This plant has been known to me for many years, having been collected first in York County, Maine, then on Nantucket, on Marthas Vineyard, where it is more common than I have found it elsewhere, and on Long Island. It is found in damp sandy places, usually growing with *H. canadense*, *H. majus*, *H. mutilum*, and *H. boreale*, one or all, and is not less distinct in appearance from each of them than are they among themselves. It differs from *H. canadense* in broader often subclasping leaves, more diffuse inflorescence, and smaller often ellipsoid capsules. Narrower leaves, more spreading and compound inflorescence, and smaller capsules distinguish it readily from *H. majus*, while it stands apart from *H. mutilum* by stricter, less branched habit, narrower less clasping leaves and longer, or more ellipsoid, purple capsules. Certain specimens approach *H. canadense* in the form and color of the pods, other examples seem nearer to *H. mutilum*, and it may well be questioned whether it be not a hybrid of these two species or, indeed, partly of *H. canadense* and *H. boreale* as some specimens might seem to suggest. But all of our small St. John's-worts of this group are nearly related and, considering the extended coastwise range of *H. dissimulatum*, as good reasons appear for viewing it as one of a chain of close species as for surmising that it may be a cross.

In addition to material from Maine, Nantucket, Marthas Vineyard, and Long Island, collected by myself, the following specimens may be cited:

In herb. N. Y. Botanical Garden:

RHODE ISLAND: Kingston, Aug. 21, 1906, *E. S. Reynolds*.



PENNSYLVANIA: Smithville, Lancaster County, *J. K. Small & J. J. Carter*.

MARYLAND: Hyattsville, Aug. 13, 1904, *H. D. House*.

NORTH CAROLINA: Mica, June, 1898, *C. W. Hyams*.

In herb. Columbia University:

NEW YORK: Springfield, L. I., 1896, *Elizabeth G. Knight*;  
New Dorp, Staten Island, Aug. 31, 1890, *N. L. Britton*.

SAROTHTA GENTIANOIDES L.

Abundant in dry sandy places, stems appearing June 15, 1911; in full flower in September. The plant may be actually minute, its simple stem bearing only a single flower, or densely branched to form a firm convex mass 1-1.5 dm. in diameter.

TRIADENUM VIRGINICUM (L.) Raf.

Very common in wet swamps and about the borders of muddy ponds. Earliest leaves May 31, 1908; no flowers remaining in September.

ELATINACEAE

ELATINE AMERICANA (Pursh) Arn.

Common in some of the sandy ponds, growing in shallow water near the shore. Observed especially in Maxcy's Pond, Miriam Coffin Pond, and Miacomet Pond. At Maxcy's Pond on Sept 12, 1907, it grew as profusely on the damp sand where the water had receded as beneath the surface along the shore. At one spot in heavy mud ten yards or more from the water's edge it had formed compacted moss-like mats, some of them six inches across, a mode of growth remarkably unlike that of the submerged plant. Correlated with this difference in habit ran a variation in characters which was brought out strikingly by comparison of the living plants. In water and on damp sand the individual plants were separate in growth, uniformly simple-stemmed, and whitish or pale green in color. In the mud form the matted stems were often divergently much branched and the general color a lively green tinged with reddish or purple, these tints deepening on the capsules into bright crimson; instead of greenish white the petals were rose color and were sometimes as large as 1.5 mm. in breadth. The capsules, some being four-valved, were larger than those of

the submerged plant and of a distinctly different form, depressed-subglobose and wider than long instead of broadly obovoid and longer than wide; actual measurements were 2 mm. wide by 1 mm. long in the terrestrial plant and only 1-1.5 mm. wide by 1 mm. long or more in the normal aquatic form.

## CISTACEAE

CROCANTHEMUM CANADENSE (L.) Britton.

*Helianthemum canadense* Michx.

The typical plant is not common and is rather local in its distribution, giving place to the following, which is everywhere abundant. It is however frequent in the oak barrens towards Siasconset and is found sparingly in Quaise, on the plains towards the south shore, on Great Neck and elsewhere. No flower buds visible June 3, 1909; first flowers June 11, 1909; in full flower June 19, 1910; a few flowers remaining June 30, 1912. Reduced petaliferous flowers are often produced in September.

### \**Crocanthemum dumosum* sp. nov.

Similar to *Crocanthemum canadense* but lower and of more branched and spreading habit, commonly diffuse and semi-prostrate or ascending, the pubescence somewhat more densely and softly canescent, intermixed with scattered non-stellate longer hairs and some minute glandular hairs of a reddish color; leaves smaller and shorter than those of *C. canadense* and of a more bluish green color, mostly oval and elliptic and obtuse, often very small and crowded on the short divergent branchlets; flowers slightly paler than in *C. canadense*; mature calyx often larger, the sepals very broad and mostly acuminate, usually bearing reddish papillae on the outer surface and reddened glandular or viscid hairs in the pubescence; primary inflorescence an ascending succession of single petaliferous flowers succeeded by rather numerous flowers intermediate in size and character between these and the later apetalous ones.

Well marked and abundant all over Nantucket, combining with such common and characteristic island plants as *Amelanchier nantucketense*, *Ilex fastigiata*, and *Linum intercursum* to stamp the flora with a signally distinctive character. It is found also on Marthas Vineyard and on the Hempstead Plains of Long Island.

Blooms rather earlier than *C. canadense*. First flowers May 31, 1909, and quite generally in bloom June 1; June 3, 1911; still some flowers June 26, 1910. At one station a number of clustered plants bore flowers so pale in color as to appear almost white.

Type from Nantucket, Sept. 21, 1899, in herb. N. Y. Botanical Garden.

The typical form of the plant has an unlikeness to typical *Crocanthemum canadense* greater than appears between some other closely allied species within the genus, and this diversity of aspect becomes especially striking when, as is sometimes the case, the two are found growing near together. Typical *C. canadense* is a taller erect plant with lighter-colored stems and longer and more slender and simple ascending branches, narrowly oblong or oblanceolate leaves tapering to the base and the acute apex, brighter green on the upper surface and less densely pubescent. Ordinarily it holds very true to these characters, showing little tendency to marked variation. In several instances where the two plants growing near together allowed a close comparison of the open flowers, those of *C. dumosum* were seen to be notably the larger, the acuminate sepals reaching a length of 8–10 mm. and reddened with glandular hairs and papillae, while those of *C. canadense*, narrower and mostly obtuse, were but 5–7 mm. long and only obscurely if at all glandulose. These differences are not, however, always so well marked. Nevertheless *C. dumosum* is evidently a strongly established derivative of *C. canadense*, even if it be not yet wholly disconnected from that species. It has been a recurring source of confusion to not a few Nantucket collectors and it seems altogether expedient to dispose of it as a stumbling block by giving it identity by a name.

\**CROCANTHEMUM MAJUS* (L.) Britton.

*Helianthemum majus* B.S.P.

Rather common on the plains towards the south shore; elsewhere very local although widely scattered, but wanting over a great part of the north and east sides of the island. No visible flower buds June 22, 1910, July 2, 1912; first flowers July 10, 1912. small petaliferous flowers sometimes appear in September.

**\**Crocanthemum propinquum* Bicknell.***Helianthemum propinquum* Bicknell.

Rather local, but not uncommon in dry open places or along sandy roadways through pine barrens. Common on Marthas Vineyard. In full bloom June 26, 1910; not many flowers left June 29, 1912; a few belated flowers July 11, 1912.

This plant, not at all uncommon from Nantucket to western Long Island and doubtless further south, appears to remain almost unknown to botanists and seems not to have been reported by any collector since it was first described in Britton's Manual over eleven years ago. In the seventh edition of Gray's Manual it has been quite misunderstood, being mistaken for the plant described in this paper as *Crocanthemum dumosum* and referred to as being probably only a stunted form of *C. canadense*.

I know the plant now much better than when I ventured to give it a name and have found no reason to doubt that it is an unequivocal species, that is to say, one that is organically discrete from those allied species which most nearly approach it, however close the degree of their relationship. Narrow indeed is the interval between this plant and those other convergent species whose distribution it partly shares. But I have not found in this any proof of consanguinity but rather an example of the exceeding closeness in which specific lines may run in perfect security from coalescence or entanglement. The plant is to be viewed critically especially in its relation to *C. majus*. Its clustered primary flowers at once give this indication and mark its distinctness from *C. canadense*. Singularly enough, however, in the later stages of its growth it more nearly resembles the latter, agreeing in color of foliage and slender ascending branches surpassing the primary inflorescence. This character of the mature plant sketches it out clearly from *C. majus*, of strict habit and short close branches, but in its unbranched early-flowering stage, then also of paler foliage, it is almost a reduced counterpart of the larger plant.

To review its differences from *Crocanthemum majus*, it is a much smaller and more slender and flexuous plant, at length more openly and slenderly branched, less densely canescent from the first and finally much greener, the leaves narrower and more

obtuse, often spatulate-linear, and usually on more obvious petioles; the primary inflorescence is of more delicate and open structure, the flower buds elliptic in form rather than ovoid, the calyx becoming notably larger, 8–10 mm. long, and often strongly reddish-tinged, thus equaling in length the largest calices of *C. canadense* as well as corresponding in color, although with narrower sepals and wanting the characteristic pilose hairs; the narrow outer sepals are shorter than in *C. majus*, and the even smaller petals are of rather a brighter yellow; the primary capsules are smaller, thinner-walled, and less broadly ovoid, longer than wide instead of wider than long, and are without the umbonate tip; it is, in fact, much more like the capsule of *C. canadense*, although smaller and narrower; the papillose seeds are also much like those of *C. canadense*.

There is nothing in all this that denotes the plant to be necessarily of mixed strain, nor do my observations lead me to believe that it is a hybrid. It does indeed possess in combination the early flowering time of *Crocanthemum canadense* and the smaller pale yellow flowers of *C. majus*, together with the slender branching of the one and the clustered petaliferous flowers of the other, yet its capsule has not its counterpart in that of either, nor is it intermediate with them, being smaller and less broadly ovoid. The plant stands apart from these companion species also in its small size and more delicate structure, in the prevailing form of the leaves and in its non-cespitose habit. Its slender stems, although sometimes loosely clustered, commonly arise at distinct, even remote intervals along tortuous elongated rootstocks, forming open groups or larger patches, sometimes several feet in diameter. It is rarely found associated with more than one of its close allies, often, indeed, occupying territory where not either one of the others is found at all.

The relationship of *Crocanthemum propinquum* to the little-known *C. georgianum* of the southern states is evidently close, although, according to Dr. Small, the latter possesses the very distinct character, as compared with the northern group of species, of bearing the petaliferous and apetalous flowers in the same clusters.

*HUDSONIA ERICOIDES* L.

Few plants of Nantucket spread over the island more widely or in greater abundance than this little heathlike species and not one is more conspicuous in the landscape when in full bloom. Nor is there any other that, at flowering time, puts its scene in color with quicker transformation, for there come seasons when it bursts into bloom on all sides in the hours of a single hot morning.

Earliest flowers May 30, 1909, quite generally in bloom June 2; first flowers June 4, 1911, in the early morning, everywhere in flower by noon; abundantly in bloom June 7, 1908, inflorescence becoming brown by the 13th and but few flowers remaining on the 18th; in the season of 1910 it had passed flowering in exposed places June 20, although still blooming freely in the shade of pine groves.

After full bloom it remains for one or two weeks the season's most conspicuous flower, spreading its sheets of gold along the roadways and over acres of plain and hillside, a radiant sight. A few days later the flowers are withered and the wide tracts that had glowed with their color become brown and rusty as if seared by fire.

In open sandy places where this plant has formed the compact circular cushions that are one of its modes of growth, the flowers usually open first close to the ground on the side towards the morning sun, blending together in patches of expanding brightness as they continue to unfold. Gradually as the sun rises overhead the glow of color creeps back along the borders of the tuft, sometimes uniting around its circumference in a golden ring. Soon afterwards the entire tuft has become an unbroken mass of bloom.

Often in midsummer these cushion-like tufts even in the hottest and most exposed sandy spots remain fresh and green in bright contrast to their parched surroundings, calling to mind so remote a comparison as the stones along a woodland brook covered with green moss.

In open pine scrub south of the town on June 5, 1911, several patches of this plant, all near together, bore flowers of palest sulphur-yellow, in striking contrast to the normal bright yellow flowers everywhere about them.

## HUDSONIA TOMENTOSA Nutt.

Very abundant, blanketing the dunes and reaches of white sand back of the beaches and occurring on sandy exposures all over the island. It is sometimes found in association with the preceding but seems not to mix readily with any other plant. Close to blooming June 3, 1911; in full flower June 7, 1908, June 15, 1910, and some flowers remaining June 27; last flowers July 2, 1912, on the exposed ocean front at Siasconset, where many plants flower later than in more protected parts of the island. Ordinarily it begins to flower a little earlier than *Hudsonia ericoides*.

## LECHEA MINOR L.

Abundant on the eastern side of the island from Wauwinet to Saul's Hills and Siasconset, extending west to Shawkemo and through the South Pasture to Surfside; not seen on the western side of the island. The season's shoots a few inches high June 23, 1910.

## LECHEA VILLOSA Ell.

Much less common than the preceding but like it restricted mainly or entirely to the eastern side of the island, having a scattered distribution from Wauwinet to Siasconset and the South Pasture and from Pocomo to Shawkemo and Saul's Hills.

## LECHEA MARITIMA Leggett.

One of the island's most common plants, appearing everywhere in dry sandy soil, even to the tops of Saul's Hills. It makes its best growth in pure sand, where it becomes widely branched and densely canescent. In less simple soils amid the low vegetation of the moorland or in partial shade it is more thinly canescent and shorter-branched, having a narrower panicle and closer inflorescence. Such forms take on a likeness to *Lechea juniperina* that seems almost to shadow the origin of that more northern species. Sometimes on rising ground in open growths of pines or other trees it may become very slender and greener, with more scattered leaves and branches, more slenderly branched and open panicle of longer-pedicelled flowers and rather larger fruiting calyx—var. *interior* Robinson.

In full flower Sept. 3, 1904, Sept. 11, 1899; small new shoots

June 15, 1910. In the autumn, sometimes as early as September, the basal shoots may be found beneath the surface of the sand so densely invested with white pubescence as to appear as if coated with hoar frost.

\**LECHEA LEGGETTII* Britton & Hollick.

*L. moniliformis* Bicknell.

Not rare on the eastern side of the island from Wauwinet to Polpis, Gibbs' swamp and Tom Never's swamp; one station near Madequecham Pond on the south shore. It is found in low grounds spreading to dry sandy levels near wet places; in one instance it grew on the border of a sphagnum bog, and in another in wet soil along a brackish marsh.

Plants 6 inches high June 24, 1910; flower buds well advanced Aug. 7, 1906; some mature pods Aug. 31, 1904.

This, in its extreme phase, is the plant described by me some years ago as *Lechea moniliformis*. The type specimens, as well as others like them from Long Island, mark a pronounced departure from typical *L. Leggettii*. Other specimens from Nantucket and Long Island are less distinctive and I am in doubt whether it is well to rate the plant as other than a variety of the common species. Nevertheless, it has points of distinction which need no second glance to impress any one who may be familiar with the common inland form of the species, for *L. moniliformis* would appear to be a plant of the coastal plain, and there is as yet no evidence that it does not belong exclusively among our coastal plain species. Moreover it shows this difference in habits from the more inland plant of dry open places and hilly ground, that it is of low grounds often of wet and brackish soils. A better knowledge may show that its distinctive name should be restored, but for the present let it be merged with *L. Leggettii*. I take to be typical of the latter the plant that I used to find among the hills and rocky outcroppings along the Hudson near New York and which, found also in New Jersey and on Staten Island, largely made up the material studied by Leggett and by Britton & Hollick. As compared with this the main distinguishing characters of *L. moniliformis* are the slender and elongated flowering branchlets and the markedly secund and moniliform inflorescence, for in the



typical plant the ultimate inflorescence takes a short corymbose rather than a slenderly racemulose plan. These flexuous branchlets are often borne on short spreading branches crowded on the upper part of the stem, producing a broadly ovoid or obovoid, often dense and very leafy panicle instead of a more oblong and open one. The leaves, similar to those of *L. Leggettii* proper, are rather longer and more tapering acute and narrowed into more evident petioles 1–2 mm. long. The mature calyx and pod is commonly larger and more elliptic than in the typical plant and is usually further distinguished by its decidedly purplish color; also the capsule is rather more exserted and often more distinctly short-stipitate, and the general pubescence is sparser and of rather longer and looser hairs.

*Note.*—*Lechea racemulosa* Lam. was attributed to Nantucket by Mr. Leggett and is reported by Mrs. Owen as having been found there by Mr. Dame. There would seem to be little reason to doubt that these records were based on mistaken determinations.

## VIOLACEAE

### VIOLA PEDATA L.

The commonest blue-flowered violet of Nantucket, broadcast on the plains and commons and among open growths of scrub pines. The flowers are often small for the species and of deep color, varying to pale lilac and sometimes pure white.

The spring flowers of Nantucket are late in coming, and this violet, which on Long Island colors acres of the Hempstead Plains from April, in early seasons, until the middle of May or, in later seasons, till the end of the month, is commonly in full bloom on Nantucket from late in May until after the middle of June. In the forward season of 1908 no flowers were to be found after June 15, but the following year children on their way to school were seen carrying large bunches on June 6, and it was blooming in profusion as late as June 12. Flowers are occasionally produced in midsummer and, more frequently, in September.

On Sept. 1, 1904, among scrub pines where, earlier in the year, fire had passed, destroying the herbage, many of these violets had sprung up afresh and were in full bloom. The leaves of all differed curiously from their normal form, being narrowly to

broadly cuneate and flabellately cleft into irregular lobes of varying length and breadth. Plants with similar leaves collected June 12, 1908, were rooted deep in heavy yellow sand and, like those of the burned-over tract, had doubtless suffered some disturbance of their normal course of growth.

\**VIOLA OBLIQUA* Hill.

*Viola affinis* LeConte. See Bull. Torrey Club 40: 261-270. 1913.

On a shaded bank at Watts Run, an abundant growth, and sparingly in a not distant thicket in Squam; also in the shade of a willow by a bog hole west of Trot's Swamp. In full flower as late as June 9, 1909.

Becoming 3.5 dm. high, or more; leaves thin, from narrowly to broadly cordate-ovate, attenuate to acuminate, acute, in age widely dilated at base and broader than long, the largest 9 cm. wide, the upper surface with some minute appressed hairs; sepals ovate to ovate-lanceolate, obtuse, flowers often becoming upturned; peduncles of apetalous flowers of very variable length even on the same plant, declined, ascending or sometimes strictly erect and over 1.5 dm. high; capsules mostly blotched with purple, sometimes pale, the expanded valves 7-10 mm. long; seeds pale.

\**VIOLA PAPILIONACEA* Pursh.

*Viola cucullata* of authors, not Aiton. See Bull. Torrey Club 40: 261-270. 1913.

Found only in a boggy meadow about a mile west of the town, growing sparingly with *Viola lanceolata*; in full flower June 1, 1909.

Plants rather small, somewhat tufted from multicapital rootstocks; scapes mostly not longer than the leaves; leaf blades cordate-ovate to triangular-cordate, crenulate-serrate, thinly pubescent on the upper surface with appressed silvery spiculae; sepals narrowly lanceolate, sometimes elongate, ciliolate; flowers pale blue, or deeper blue, much darker towards the throat.

*VIOLA LAETECAERULEA* Greene.

*V. papilionacea* of authors, in part, not Pursh. See Bull. Torrey Club 40: 261-270. 1913.

Found only in the town, where it is frequent by streetsides and in shaded yards, often forming close beds, and appearing as.

if introduced. In flower June 3, 1909, June 7, 1911. Petioles more or less pubescent dorsally, sometimes densely villous, but more often glabrous, except towards the base of the blade; blades mostly with some pubescence beneath at the base or along the veins. When growing in damp shaded yards the leaves are thinner and brighter green, resembling those of *Viola obliqua*; plants more deeply set in looser and drier soils have duller leaves of thicker texture, the blades broadly reniform with wide sinus and rounded to the short-pointed apex, the margins more closely crenate-serrate; capsules green.

*VIOLA FIMBRIATULA* Sm.

Excepting *Viola pedata* no other blue-flowered violet is common on Nantucket. Therefore it might be thought that the purity of the *fimbriatula* line would be wholly uncontaminated, and that variation in the species might be seen in its intrinsic phases free from any influence of hybridization. Nevertheless, the variation shown under this insular seclusion is not less remarkable than is commonly the case elsewhere, where associated species may be supposed to have had their influence. The more common form on Nantucket has ovate-oblong subcordate leaves little if at all incised and often as long as the petioles. A coarser form has longer petioles and larger blades, which become 5 cm. or more wide across the subtruncate base. In bare spots on clayey soil are found very small forms with ovate to ovate-lanceolate subentire leaves narrowed into short petioles and crowded in a close rosette against the ground. In shade among the Miacomet pines there is a form having considerable pubescence but otherwise showing something of the aspect of *Viola sagittata*, many of the narrow and long-petioled leaves being rather deeply cordate and saliently dentate at the base with upcurved acute teeth and, notwithstanding their pubescence, appearing bright green and shining on the upper surface; the flowers are deep purple with the rather narrow petals often crenulate and obscurely pointed.

A series of Nantucket specimens was submitted to Doctor Brainerd who says of them, referring especially to the *sagittata*-like plants: "Your plants are not strictly hybrids but intermediate

forms which have probably resulted from hybridization in the indefinite past. We have no pure *Viola sagittata* in Vermont, but most of your odd forms turn up from time to time in the Champlain valley."

\**VIOLA FIMBRIATULA* Sm.  $\times$  *OBLIQUA* Hill.

A single cluster growing with *Viola obliqua* on a shaded bank at Watts Run, June 9, 1909.

Petioles and peduncles pubescent with short spreading hairs, the leaf blades similarly clothed on the veins beneath, sparsely appressed-pubescent on the upper surface, ciliate; later leaves ovate-oblong and openly cordate, or somewhat attenuate-triangular from a subtruncate base, coarsely and rather closely sinuate-dentate towards the base, the largest 6 cm. wide by 9 cm. long on petioles 10-15 cm. long; apetalous flowers few, mostly weakly developed, the buds lanceolate and acute, their petioles ascending-horizontal or declined.

This plant grew in shade beside a mass of *Viola obliqua*. No *Viola fimbriatula* was found with it, but the specimens are obviously intermediate between these two species, and on Nantucket no others are possibly to be assigned as parents.

\**VIOLA ODORATA* L.

An old garden plant of the town, here and there strayed along streetsides and established in neglected yards. One particular tuft has grown for many years in a crevice between the paved sidewalk and a brick wall on North Water Street. It was first noticed in 1899, and has been found at the same spot on every subsequent visit to the town, evidencing both the tenacity of the plant and the undisturbed repose of the town streets.

*VIOLA LANCEOLATA* L.

Very common in bogs and low grounds and in wet sandy soil about the borders of ponds. In full flower May 30, 1908, June 3, 1909, June 3, 1911, and still commonly in flower June 15; some flowers remaining June 25, 1910.

Plants growing with *Viola pallens* and appearing more or less intermediate with it, and others approaching *Viola primulifolia* are not improbably hybrids.

\**VIOLA PRIMULIFOLIA* L.

Less common than the preceding and often found in drier soils. In full flower May 31, 1908, June 1, 1909; last flowers June 17, 1910, June 15, 1911.

*VIOLA PALLENS* (Banks) Brainerd.

Common in open sphagnum bogs and meadows and in damp thickets. No flowers left May 31, 1908, June 7, 1909; still blooming June 3, 1910, a few last flowers June 8, 1911.

A form of distinct appearance was found in several wet sphagnum bogs, especially in one near Shawaukemmo Spring. It is strictly glabrous throughout, the scapes and petioles delicately streaked with pink, the leaf blades unusually thick and veiny, becoming as large as 5 cm. in breadth, and varying in shape from long-ovate and deeply cordate to broadly cordate-reniform; petioles sometimes 9 cm. long; longer peduncles 1.5 dm.; capsules green; seeds 1-1.25 mm. long, dark gray to nearly black when mature. Doctor Brainerd, who has examined specimens, regards it as a form of *Viola pallens*.

*Note.*—*Viola blanda* Willd. which proves to be common on Marthas Vineyard is to be looked for on Nantucket.

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